

WHAT IS CLAIMED IS:

1. A control device for a continuously variable transmission which transmits an output torque of an engine in a vehicle to a drive wheel, the continuously variable transmission comprising a primary pulley which inputs the output torque of the engine, a secondary pulley which outputs a driving torque to the drive wheel, and a V-belt which is wrapped around the primary pulley and secondary pulley, wherein a radius of contact between the V-belt and the primary pulley and secondary pulley is varied in accordance with an oil pressure that is supplied to the primary pulley and secondary pulley respectively, the control device comprising:

an output torque adjusting device which adjusts the output torque of the engine;

an oil pressure supplying device which supplies the oil pressure to the primary pulley and secondary pulley;

a sensor which detects slippage of the V-belt; and

a programmable controller programmed to:

operate the output torque adjusting device to cause the output torque of the engine to decrease while controlling the oil pressure supplying device to reduce the oil pressure supplied to the secondary pulley, on the basis of the slippage of the V-belt.

2. The control device as defined in Claim 1, wherein the secondary pulley comprises a pair of conical plates which hold the V-belt from both sides in accordance with the supplied oil pressure, and the controller is further programmed to control the oil pressure supplying device to reduce the oil pressure supplied to the secondary

pulley, when slippage of the V-belt is detected, until a holding force of the conical plates on the V-belt reaches a predetermined holding force.

3. The control device as defined in Claim 2, wherein the predetermined holding force is a value that is set in advance on the basis of a mechanical strength of the V-belt under slippage.

4. The control device as defined in Claim 2, wherein the primary pulley comprises a pair of conical plates which hold the V-belt from both sides in accordance with the supplied oil pressure, the oil pressure supplying device comprises a line pressure adjustment device which generates a predetermined line pressure, a primary pressure adjustment device which adjusts the line pressure to a primary pressure that is supplied to the primary pulley, and a secondary pressure adjustment device which adjusts the line pressure to a secondary pressure that is supplied to the secondary pulley, and the controller is further programmed to control the line pressure adjustment device, primary pressure adjustment device, and secondary pressure adjustment device to reduce all of the line pressure, the primary pressure, and the secondary pressure when slippage of the V-belt is detected.

5. The control device as defined in Claim 4, wherein the vehicle comprises an accelerator pedal, the control device further comprises a sensor which detects a depression amount of the accelerator pedal, and the controller is further programmed to control the line pressure adjustment device, primary pressure adjustment device, and secondary pressure adjustment device to increase all of the line pressure, the primary pressure, and the secondary pressure in accordance with an increase in

the depression amount of the accelerator pedal.

6. The control device as defined in Claim 2, wherein the controller is further programmed to calculate a transmittable torque that can be transmitted by the V-belt under the predetermined holding force, and to operate the output torque adjusting device to reduce the output torque of the engine to a level equal to or smaller than the transmittable torque.

7. The control device as defined in Claim 1, wherein the controller is further programmed to prevent the output torque adjusting device from reducing the output torque of the engine and to prevent the oil pressure supplying device from reducing the oil pressure supplied to the secondary pulley until the slippage of the V-belt detected by the sensor continues for a predetermined first reference time.

8. The control device as defined in Claim 7, wherein, when the slippage of the V-belt detected by the sensor continues for a second reference time which is greater than the first reference time, the controller is further programmed to operate the output torque adjusting device to further reduce the output torque of the engine, and to control the oil pressure supplying device to increase the oil pressure supplied to the primary pulley.

9. The control device as defined in Claim 1, wherein the controller is further programmed to determine whether or not the slippage of the V-belt has stopped, and to gradually increase the reduced output torque of the engine when the slippage of the V-belt has stopped.

10. The control device as defined in Claim 9, wherein the control device further comprises a sensor which detects an actual oil pressure supplied to the secondary pulley, and the controller is further programmed to determine that the slippage of the V-belt has stopped when the actual oil pressure matches an oil pressure that the controller has commanded to the oil pressure supplying device.

11. A control device for a continuously variable transmission which transmits an output torque of an engine in a vehicle to a drive wheel, the continuously variable transmission comprising a primary pulley which inputs the output torque of the engine, a secondary pulley which outputs a driving torque to the drive wheel, and a V-belt which is wrapped around the primary pulley and secondary pulley, wherein a radius of contact between the V-belt and the primary pulley and secondary pulley is varied in accordance with an oil pressure that is supplied to the primary pulley and secondary pulley respectively, the control device comprising:

means for adjusting the output torque of the engine;

means for supplying the oil pressure to the primary pulley and secondary pulley;

means for detecting slippage of the V-belt; and

means for operating the output torque adjusting means to cause the output torque of the engine to decrease while controlling the oil pressure supply means to reduce the oil pressure supplied to the secondary pulley, on the basis of the slippage of the V-belt.

12. A control method for a continuously variable transmission which transmits an

output torque of an engine in a vehicle to a drive wheel, the engine comprising an output torque adjusting device which adjusts the output torque of the engine, the continuously variable transmission comprising a primary pulley which inputs the output torque of the engine, a secondary pulley which outputs a driving torque to the drive wheel, and a V-belt which is wrapped around the primary pulley and secondary pulley, wherein a radius of contact between the V-belt and the primary pulley and secondary pulley is varied in accordance with an oil pressure that is supplied from an oil pressure supplying device to the primary pulley and secondary pulley respectively, the control method comprising:

- determining slippage of the V-belt; and

- operating the output torque adjusting device to cause the output torque of the engine to decrease while controlling the oil pressure supplying device to reduce the oil pressure supplied to the secondary pulley, on the basis of the slippage of the V-belt.